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PHILOSOPHICAL TRANSACTIONS.

Monday, May 6. 1667.

The Contents.

An Account of an Easier and Safer Way of Transfusing Blood, vid. by the Veins onely. An Experiment of bleeding a Mangy, into a Sound Dog. An Extract of a Letter written by a French Philosopher, concerning the same Subject of Transfusion. Observations touching the Uniting of Barks of Trees cut, to the Tree it self. An Experiment of making Cherry-Trees, that have wither'd fruit, to bear good and full fruit. An Experiment on Aloe Americana Serratifolia weigh'd; seeming to infer a Circulation of the Sappe in Plants. An Extract of a Letter, about the Invention of Dividing a Foot into many thousand parts, for Mathematical purposes. More Wayes propos'd, for the same purpose. Observations of the Star called Nebulosa, and of that in the Neck of the Whale. Extract of a Letter, concerning a New Discovery of the Communication of the Ductus Thoracicus with the Emulgent Vein. A Description of several sorts of Granaries, as those of London, Dantzick, Muscovy. Inquiries for Hungary, Transilvania, Egypt, Guiny.

An Account

Of an easier and safer Way of Transfusing Blood out of one Animal into another, viz. by the Veins, without opening any Artery of either.

THis Way was first practis'd (for ought we know) by Doctor Edmond King, and the success thereof in two Experiments, communicated by him to the Royal Society, as follows,

N n n

I. I

1. I took a Calf and a Sheep, both of the larger sort, and having prepared a Jugular *Vein* in each, I planted my Pipes and Quills, as is usual, both in the Jugular *Vein* of the Calf (designed to be the *Emittent*) and in that of the Sheep (intended for the *Recipient*.) Then I took out of the Sheep 49 ounces (*Haver de pois weight*) of blood, before any other blood was let in; about which time, the company concluding the Sheep to be very faint, and finding the blood to run very slowly, I stopp'd the *Vein* of the Sheep, and unstopp'd the Pipe in the Calf, letting run out 10 ounces into a Porringer, which was done in about 40 seconds of a Minute. Then I convey'd Pipes from the *Emittent* Calves *Vein*, into the *Recipient* Sheeps *Vein*; and there ran a good free stream of blood for the space of 5 minutes (though perhaps less swift than the first 10 ounces.) And not to be deceived in the running, I did often strike with my finger the upper part of the emitting *Vein*, and thereby easily felt every stroke answered on the *Recipient* *Vein*, just like a *Pulse*. And now supposing that by this time (*viz.* the lapse of 5 minutes) the Sheep had received as much, if not more blood, than it had lost, we stopp'd the current of blood from the Calf, and closed also the *Vein* of the Sheep; and then having untied her, and set her down in the room, she went about and appeared to have as much strength, as she had before the loss of her own blood. Then resolving to bleed the Sheep to death, we bound her the second time, and open'd the *emittent* part of the *Vein* again; whereupon having bled about 60 ounces, she fell into Convulsions; and after the loss of about 5 ounces more, she died upon the place: and being dress'd by the Butcher, there did not, in all the usual places, appear above 3 ounces of blood; and the whole Sheep look'd of a lovely white; and the meat of it (to the taste of those, that eat of it) was very sweet.

The Sheep being dead, we resolv'd likewise to see the Calf bleed to death; but he having bled 10 ounces, and then for the space of 5 minutes more into the Sheep, and rested a good while, the blood by that time began to coagulate in the *Vein*; which made me open the *Carotid Artery*, letting thence run out about 25 ounces of blood, of a very lovely and vivid colour, vastly exceeding

celling therein the blood of the Vein. The Calf, when dress'd, had, by the information of the Butcher, as little blood as the Sheep; and we saw him look whiter, than usually they do in the ordinary way of killing.

2. I took out 45 ounces and better, of blood, out of the *Fugular Vein* of a Sheep, of a lesser size than the former; by which time, the Spectators, as well as my self, found her exceeding faint, and some thought her pass'd recovery, without a supply of blood. Then I convey'd blood from the *Fugular Vein* of a Calf into that of the Sheep, for the space of 7 minutes, when we did believe, by the continuance of a good stream from the Calf, that the Sheep had already received more blood, than she had lost. Whereupon we set her free, and she had no sooner got her liberty, but seeing a Dog near her (which was a Spaniel, that had formerly suffered the transmission of Sheeps-blood into him) she butted with great violence at him three or four times, not appearing at all concern'd at what she had endured in the Experiment. We keep this Sheep alive, she being sent to grafs again, and seeming hitherto very strong and lusty.

The Calf was much larger than the Sheep. We bled the Calf to death, and received from him six Porringers full of blood, after the Sheep had been suppleid, each Porringer containing 11½ ounces of water. The Sheep lost four of the same measures full of blood; which being supply'd by that of the Calf, we reckon, that the Calf lost 10 such measures in all.

An Account Of another Experiment of Transfusion, viz. of Bleeding a Mangy into a Sound Dog.

*This was made by Mr. Thomas Coxe, and imparted likewise
to the Royal Society in manner following.*

I procured an old Mungrell Curr, all over-run with the Mainge, of a middle size, and having, some hours before, fed him plentifully with Cheese-parings and Milk, I prepared the *Fugular Vein*,